

REMARKS

Applicant would like to thank the Examiner for the thorough consideration given to the present application and the courtesies extended to applicant's representative during a telephone interview on December 31, 2002. Claims 1, 4, 5, 13, 15-21 and 23-33 remain pending in the present application. Claims 1, 5, 13, 21 and 31 have been amended and Claim 3 has been cancelled from the present application. In addition, Claims 32 and 33 have been added to the present application. The basis for the above amendments may be found throughout the specification, drawings and claims as originally filed. The Examiner is respectfully requested to reconsider and withdraw his rejections in view of the above amendments and remarks as set forth below.

DRAWINGS

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The Examiner objects to the drawings under 37 C.F.R. 1.83(a) for not showing every feature of the invention specified in the claims. A corresponding request for proposed drawing changes is being filed concurrently herewith in a separate letter in response to the objections to the drawings contained within the Office Action. The changes made to the drawings are fully described in the request. It should be noted that capacitor 42 was disclosed in the specification as originally filed (e.g., see, pg. 27, line 15 thru pg. 28, line 7), and thus does not constitute new matter. Applicant submits that these changes serve to overcome

the objections. Accordingly, Applicant will forward the formal drawings upon receipt of a Notice of Allowance.

REJECTIONS UNDER 35 USC §102

Claims 1, 2, 5-7, 13, 14, 17-18, 20-23, 26-27 and 30-31 stand rejected under 35 USC §102(b) as being unpatentable over U.S. Patent No. 5,289,301 (Brewer). Applicant respectfully traverses this rejection.

Brewer is directed generally to a liquid crystal display device. Of particular interest, Brewer discloses an electronic control module 9 which includes an integrated circuit 10 and a resistor element 19 or 22. However, Applicant notes that the resistor elements 19 or 22 are not formed to a prescribed pattern,[?] such that the resistance value of the resistance element is capable of being set by partially removing the pattern of the resistance element.

Similarly, Applicant's claimed invention is directed to a liquid crystal display device. The liquid crystal display device generally includes a liquid crystal disposed between a pair of substrates. Specifically, Claim 1 recites "a resistance element having an adjustable resistance value, disposed on at least one of the pair of substrates, ..., the resistance element having the same material as that of the at least one electrode and formed to a prescribed pattern ..." Additionally, Claim 1 recites "the resistance value of said resistance element is capable of being set by partially removing the pattern of the resistance element" in combination with the other elements recited in the claim. In this way, the voltage supplied to the liquid crystal display device by the host equipment may be fixed

claim 3

to a given voltage, and yet the voltage imposed on the liquid crystal can be adjusted to a prescribed value which is suitable to operate the liquid crystal. The Applicant's claimed technique for adjusting the resistance value of the resistance element is not taught or suggested by the relied upon reference. Therefore, it is respectfully submitted that Claim 1, along with claims depending therefrom, defines patentable subject matter over Brewer. Applicant notes that independent Claims 5, 13, 21 and 31 recite similar subject matter, and thus should be allowable, along with claims depending therefrom, for the same reasons as Claim 1.

Applicant further notes that independent Claims 27 and 30 are also directed to a liquid crystal display device. In addition to the integrated circuit (IC), these claims recite "a capacitor located between the first and second substrates, connected to said liquid crystal driving IC for stabilizing the voltage imposed on said liquid crystal" in combination with the other elements recited in the claim. The capacitor stabilizes the voltage output from the liquid crystal driving integrated circuit as noted on page 27, line 15 thru page 28, line 7 of the specification. Brewer does not teach or suggest a capacitor disposed between the substrates which sandwich the liquid crystal. Moreover, Brewer does not teach or suggest a capacitor electrically connected externally to the integrated circuit 10 for stabilizing the voltage output by the integrated circuit, and thus imposed on the liquid crystal. Therefore, it is respectfully submitted that Claims 27 and 30, along with claims depending therefrom, also define patentable subject matter over Brewer.

Lastly, Applicant notes that Claims 27 and 30 had previously recited the capacitor being located between the substrates. Since this aspect of the present invention should have fallen within the scope of the Examiner's previous searching, Applicant respectfully asserts that no further searching is required by the Examiner. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

CONCLUSION

All of the stated grounds for rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and further requests that they be withdrawn. Accordingly, it is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes that

personal communication will expedite prosecution of this application, he is invited to telephone the undersigned at (248) 641-1600.

Prompt and favorable consideration of this response is respectfully requested.

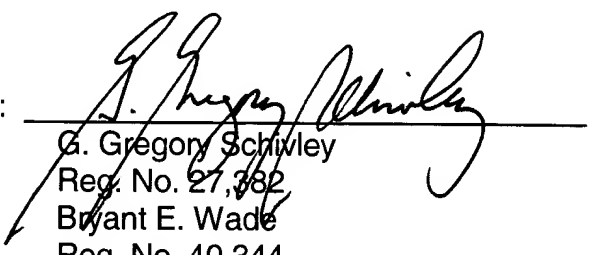
Respectfully submitted,

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Harness, Dickey & Pierce, P.L.C.
P.O. Box 828
Bloomfield Hills, MI 48303
(248) 641-1600

GGs/TDM/mas

By: _____


G. Gregory Schwley
Reg. No. 27,382
Bryant E. Wade
Reg. No. 40,344
Attorneys for Applicants

ATTACHMENT FOR CLAIM AMENDMENTS

The following is a marked up version of each amended claim in which underlines indicates insertions and brackets indicate deletions.

1. (Thrice Amended) A liquid crystal display device for displaying a visible image by controlling an alignment of a liquid crystal disposed between a pair of substrates by imposing a drive voltage on the liquid crystal through at least one electrode, comprising:

a driving integrated circuit (IC) mounted on one of the pair of substrates, [and] the driving integrated circuit operable to supply the drive voltage to the at least one electrode; and

a resistance element having an adjustable resistance value, disposed on at least one of the pair of substrates, and electrically connected to the driving IC, the resistance element having the same material as that of the at least one electrode and formed to a prescribed pattern, wherein the resistance value of said resistance element is capable of being set by partially removing the pattern of the resistance element, wherein an input voltage for operating the driving IC is capable of being varied depending [based] on the resistance value of the resistance element and the drive voltage is capable of being varied depending [based] on the value of the input voltage.

5. (Thrice Amended) A method of manufacturing a liquid crystal display device for displaying a visible image by controlling an alignment of a liquid crystal disposed between a pair of substrates by imposing a drive voltage on the liquid crystal through at least one electrode, wherein the method is comprised of the following steps of:

mounting a driving integrated circuit (IC) on at least one of the pair of substrates, the driving IC operable to supply the drive voltage to the at least one electrode;

forming [mounting] a resistance element having an adjustable resistance value on at least one of the pair of substrates, the resistance element being electrically connected to the driving IC, the resistance element having the same material as that of the at least one electrode and formed to a prescribed pattern;
and

partially removing the pattern of the resistance element so as to adjust
[adjusting] the resistance value of the resistance element so as to adjust an input voltage for operating the driving IC, wherein the drive voltage is varied based on the value of the input voltage.

13. (Twice Amended) A liquid crystal display device comprising:

a first substrate;

a second substrate opposite said first substrate;

a liquid crystal disposed between said first and second substrates;

a plurality of electrodes disposed on at least one of the substrates, wherein a drive voltage is imposed on the liquid crystal through at least one of the plurality of electrodes;

a driving integrated circuit (IC) mounted on at least one of the substrates and operable to supply the drive voltage to the at least one of the plurality of electrodes; and

a resistance element having an adjustable resistance value, disposed one of said first and second substrates, and electrically connected to the driving IC, the resistance element having the same material as that of the at least one electrode and formed to a prescribed pattern, wherein the resistance value of said resistance element is capable of being set by partially removing the pattern of the resistance element, wherein an input voltage for operating the driving IC is capable of being varied depending [based] on the resistance value of the resistance element and the drive voltage is capable of being varied depending [based] on the value of the input voltage.

21. (Thrice Amended) A liquid crystal display device for displaying a visible image, comprising:

a first substrate;

a second substrate opposite said first substrate;

a liquid crystal disposed between said first and second substrates;

a plurality of electrodes disposed on at least one of the substrates, wherein a drive voltage is imposed on the liquid crystal through at least one of the plurality of electrodes;

a driving integrated circuit (IC) mounted on one of the substrates and operable to supply the drive voltage to the at least one of the plurality of electrodes; and

a resistance element having an adjustable resistance value, disposed at least one of said first and second substrates, and electrically connected to the driving IC, the resistance element having the same material as that of the at least one electrode and formed to a prescribed pattern, wherein the resistance value of said resistance element is capable of being set by partially removing the pattern of the resistance element, wherein an input voltage for operating the driving IC is capable of being varied depending [based] on the resistance value of the resistance element and the drive voltage is capable of being varied depending [based] on the value of the input voltage, thereby changing the voltage applied to the liquid crystal.

31. (Twice Amended) A display device comprising;

a substrate;

a driving IC, mounted on the substrate, for driving the display device; and

a resistance element disposed on the substrate and electrically connected to the driving IC, the resistance element having the same material as that of the at least one electrode and formed to a prescribed pattern, wherein the resistance value of said resistance element is capable of being set by partially removing the pattern of the resistance element, the resistance element being capable of changing its resistance value, wherein a voltage for operating the IC is varied depending on the resistance value of the resistance element.